Śerial No.: 09/654,951

Attorney Docket No.: F-100

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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BOARD OF PATENT APPEALS AND INTERFERENCES

In re patent application of:

Robert A. Cordery, et al.

Serial No.: 09/654,951
Filed: September 5, 2000
Confirmation No.: 7627

) Attorney Docket No.: F-100
) Customer No. 919
)
Examiner: Mary Da Zhi Wang
) Group Art Unit: 3621
)
Date: January 14, 2004

Title:

A METHOD FOR AUDITING A DATABASE AND SYSTEM FOR

CARRYING OUT SUCH METHOD

Mail Stop Appeal Brief- Patents Commissioner for Patents Alexandria, VA 22313-1450

#### **APPELLANT'S BRIEF ON APPEAL**

Sir:

This is an appeal pursuant to 35 U.S.C. § 134 and 37 C.F.R. §§ 1.191 et seq. from the final rejection of claims 1-28 of the above-identified application mailed July 14, 2003. Claims 1-28 stand at least twice rejected. This Brief is in furtherance of the Notice of Appeal filed in this case on October 14, 2003. This Brief is transmitted in triplicate. A petition for a one-month extension of time to respond is filed herewith. Accordingly, this brief is timely filed. The fee for submitting this Brief is \$330.00 (37 C.F.R. § 1.17(c)). Please charge Deposit Account No. 16-1885 in the amount of \$330.00 to cover these fees. The Commissioner is hereby authorized to charge any additional fees that may be required for this appeal or to make this brief timely or credit any overpayment to Deposit Account No. 16-1885. Enclosed with this original are two copies of this brief.

**CERTIFICATE OF FACSIMILE TRANSMISSION** 

I hereby certify that this correspondence is being facsimile transmitted to the United States Patent and Trademark Office, on January 14, 2004 (Date of Transmission).

George M. Macdonald, Reg. No. 39,284 (Name of Registered Rep.)

(Signature)

January 14, 2004 (Date)

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#### I. Real Party in Interest

The real party in interest in this appeal is Pitney Bowes Inc., a Delaware corporation, the assignee of this application.

#### II. Related Appeals and Interferences

There are no appeals or interferences known to Appellants, their legal representative, or the assignee that will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

#### III. Status of Claims

Claims 1-5, 8-18, 20 and 22-28 are in the case and under final rejection of the Examiner rejected under 35 U.S.C. § 103(a) as allegedly being rendered obvious by U.S. Patent No. 5,367,464 to Abumehdi, et al. ("Abumehdi '464") in view of U.S. Patent No. 6,076,072 to Libman ("Libman '072").

Claims 6-7, 19 and 21 are in the case and under final rejection of the Examiner rejected under 35 U.S.C. § 103(a) as allegedly being rendered obvious by U.S. Patent No. 5,367,464 to Abumehdi, et al. ("Abumehdi '464") in view of U.S. Patent No. 6,076,072 to Libman ("Libman '072") and further in view of U.S. Patent No. 5,778,076 to Kara, et al. ("Kara '076").

Appellants hereby appeal the rejection of claims 1-28.

#### IV. Status of Amendments

There are no amendments to the claims filed subsequently to the final rejection of July 14, 2003. Therefore, the claims set forth in Appendix A to this brief are those as set forth before the final rejection.

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#### V. <u>Summary of Invention</u>

Appellants' invention relates to methods and systems for providing security for a database by generating and maintaining audit data that is used to audit and verify the database. Figure 1 is reproduced below for use in a summary discussion of an illustrative embodiment.

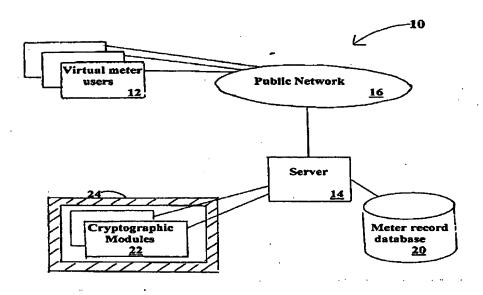


FIG. 1

Each user 12 is provided access to a particular meter record in the meter record database 20 using one of a plurality of cryptographic modules 22 to process the postage transaction. Any available cryptographic module is used each time the customer requests postage and the modules may operate independently due to the audit systems described. Audit data is updated and stored in each module 22 and can be compared to audit data stored in the server 20. (Specification at page 3, line 27-page 4, line 10; page 5, lines 20-23, page 6, lines 1-26.)

Additional features of the invention are discussed below in the Argument section of this Brief. This summary is not intended to supplant the description of the claimed

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subject matter as provided in the claims as recited in Appendix A, as understood in light of the entire specification.

#### VI. Issues

Whether claims 1-28 are patentable under 35 U.S.C. §103(a).

#### VII. Grouping of Claims

Claims 1-28 are grouped in the following groups:

Group I - Claims 1-3, 5, 9-12, 15-18, 20 and 22-26.

Group II - Claim 4.

Group III - Claim 8.

Group IV - Claims 13, 14, 27 and 28.

Group V - Claims 6-7, 19 and 21.

In Group I, independent claims 1 and claims 2-3, 5 and 9-12 that depend directly or indirectly from claim 1 stand or fall together. Independent claim 15 and claims 16-18, 20 and 22-26 that depend directly or indirectly from claim 15 stand or fall together and with those of Group 1.

In Group II, claim 4 that depends directly or indirectly from claim 1 stands or falls alone.

In Group III, claim 8 that depends directly or indirectly from claim 1 stands or falls alone.

In Group IV, claims 13 and 14 that depend directly or indirectly from claim 1 and claims 27 and 28 that depend directly or indirectly from claim 15 stand or fall together.

In Group V, claims 6-7 that depend directly or indirectly from claim 1 and claims 19 and 21 that depend directly or indirectly from claim 15 stand or fall together.



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#### VIII. Argument

As Appellants discuss in detail below, the final rejection of several of claims 1-28 is devoid of any factual or legal premise that supports the position of unpatentability. It is respectfully submitted that the rejection does not even meet the threshold burden of presenting a prima facie case of unpatentability. For this reason alone, Appellants are entitled to grant of a patent. <u>In re Oetiker</u>, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992).

### A. The Abumehdi '464 and Libman '072 References are Not Properly Combined Under 35 U.S.C. Section 103(a)

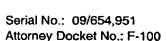
In the December 27, 2002 rejection that is incorporated by reference in the July 14, 2003 Final Rejection, the Examiner stated:

Libman teaches input information go through a plurality of modules (Figs. 2-3). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the feature of a plurality of modules to the single module of Abumehdi because it would create more options for the user to match the user's requests, such as refill the postage credit, change PIN number, updating address, etc.

Appellants argued that the references were not properly combined. The invention as presently claimed relates to auditing and verifying the integrity of database records that may be alternatively modified by a plurality of independent modules. An illustrative embodiment is a virtual postage meter system having a plurality of cryptographic modules that may alternatively be used to modify a single virtual postage meter postage value record for a particular customer. While Abumehdi '464 is a reference in the postage meter art, Libman '072 is directed to:

methods and apparatus for automatically preparing financial product and/or financial service-related communications such as marketing solicitations, financial product sales solicitations, notices and the like for dissemination to clients, potential clients, etc.

See Libman '072 at Col. 1, II. 13-18 (emphasis added). As discussed further below, the Examiner's vague reference to Figs 2-3 of Libman '072 does not even support the slightest teaching of plurality of input modules, each of which may alter a record in a



database. Clearly, the Libman '072 reference is not at all pertinent to the claimed invention and the references are not properly combined. The rejections should be reversed because the references are not in an art analogous to that of the invention as presently claimed. See *Wang Lab., Inc. v. Toshiba Corp.*, 993 F. 2d 858, 26 USPQ2d 1767 (Fed. Cir. 1993).

Appellants argued that it is clear from Abumehdi '464 at Col. 1, lines 10-48 and Col. 3, lines 3-65 that only one module could access the credit update amount record. Such update record has a one-to-one correspondence with the one franking meter. Accordingly, Abumehdi '464 specifically teaches away from allowing access to that particular record using more than one module. One of ordinary skill in the art would be led in a direction divergent from that taught in the invention as presently claimed after having read Abumehdi '464. Accordingly, the references are not properly combined and the rejection should be reversed. See *Monarch Knitting Mach. Corp. v. Sulzer Morat GmbH*, 139 F. 3d 877 (Fed. Cir. 1998).

In response to Appellants argument that there is no motivation to combine the references, the Examiner, in the Final Rejection at pages 2-3 acknowledged the requirement of some teaching, suggestion or motivation to combine the references found in the references themselves or the general knowledge of one of skill in the art. Citing In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1998) and In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). However, the Examiner then proceeded to use the invention itself as the roadmap to combine the references by stating that

[I]n this case, as general knowledge, one of ordinary skill in the art would have been motivated to add a plurality of modules to the single module of Abumehdi's teaching because it would create more options for the user to match the user's request, such as refill the postage credit, change PIN number, updating addresses, etc.

As the Federal Circuit has held, "[I]t is impermissible to use the claimed invention as an instruction manual or 'template' to piece together the teachings of the prior art ..." See *In re Fitch*, 972 F.2d 1260, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992)(quoting *In re Fine*, 837 F.2d 1071, 1075 (Fed. Cir. 1998). The cited prior art does not provide even a hint of a problem of auditing database records that may be modified by any of a plurality

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of input modules. As admitted by the Examiner, Abumehdi '464 discusses only one input module. As described below, the cited prior art does not even show a plurality of input modules. The Examiner shows no reference or knowledge to support even an appreciation of a problem of auditing records that may be modified by any of a plurality of input modules. See also *Monarch Knitting Mach. Corp. v. Sulzer Morat GmbH*, 139 F. 3d 877 (Fed. Cir. 1998). Accordingly, the references are not properly combined and the rejection should be reversed.

# B. <u>Claims 1-3, 5, 9-12, 15-18, 20 and 22-26 are not Unpatentable under 35 U.S.C. § 103(a)</u>

Claims 1-5, 8-18, 20 and 22-28 are in the case and under final rejection of the Examiner rejected under 35 U.S.C. § 103(a) as allegedly being rendered obvious by U.S. Patent No. 5,367,464 to Abumehdi, et al. ("Abumehdi '464") in view of U.S. Patent No. 6,076,072 to Libman '072").

In rejecting a claim under 35 U.S.C. §103, the Examiner is charged with the initial burden for providing a factual basis to support the obviousness conclusion. *In re Wamer*, 379 F.2d 1011, 154 USPQ 173 (CCPA 1967); *In re Lunsford*, 375 F.2d 385, 148 USPQ 721 (CCPA 1966); *In re Freed*, 425 F.2d 785, 165 USPQ 570 (CCPA 1970). The Examiner is also required to explain how and why one having ordinary skill in the art would have been led to modify an applied reference and/or combine applied references to arrive at the claimed invention. *In re Ochiai*, 37 USPQ2d 1127 (Fed. Cir. 1995); *In re Deuel*, 51 F.3d 1552, 34 USPQ 1210 (Fed. Cir. 1995); *In re Fritch*, 972 F.2d 1260, 23 USPQ 1780 (Fed. Cir. 1992); *Uniroyal*, *Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 5 USPQ2d 1434 (Fed. Cir. 1988). In establishing the requisite motivation, it has been consistently held that both the suggestion and reasonable expectation of success must stem from the prior art itself, as a whole. *In re Ochiai*, supra; *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991); *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Dow Chemical Co.*, 837 F.2d 469, 5 USPQ2d 1529 (Fed. Cir. 1988).



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Claim 1 is directed to a method for auditing a database having a plurality of records wherein each record is accessible through at least one of a <u>plurality of independent modules</u> and is shown below:

- 1. A method for auditing a database comprising a plurality of records, said records each being accessible through at least one of a plurality of independent modules, said method comprising the steps of:
- a) maintaining a <u>set of additive audit data in each of said modules;</u>
- b) controlling said modules so that each module increments a set of audit data maintained in said module when a record is accessed through said module;
- c) <u>summing said sets of audit data to generate system</u> audit data; and
- d) <u>verifying said database's integrity against said</u> <u>system audit data</u>. (emphasis added).

In the December 27, 2002 Office Action and as maintained in the July 14, 2003 Final Office Action, the Examiner rejected claims 1-5, 8-18, 20 and 22-28 under 35 U.S.C. section 103(a).

Appellants respectfully disagree with the rejection and urge its reversal for at least the reasons stated below.

The Examiner cites to Abumehdi '464 that teaches a single postage meter record system that necessarily includes an audit mechanism that is required of every current stand-alone postage meter. The U.S. postal system requires that postage meters use prepaid postage that is stored in a postage meter. A typical postage meter includes an ascending register that stores a running total of all postage dispensed by the meter and a descending register that stores the remaining amount of postage credited to the meter. Typically, a postage meter also includes a control sum register that provides a check upon the descending and ascending registers and that stores a running account of the total funds being added into the meter. Such a control sum register must always correspond with the summed readings of the ascending and descending registers.

The Examiner ignores the elements relating to a plurality of input modules, each having a set of audit data that may all be summed to calculate a system audit data. The Examiner states that:



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Abumehdi does not specifically teach said records being access [sic] through a plurality of modules. (emphasis in original) (12/27/02 Office Action, section 3).

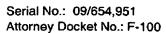
The Examiner then vaguely refers to Libman '072 at Figs. 2-3 to purportedly show a plurality of input modules. However, Libman '072 does not teach or fairly suggest a plurality of modules. The Appellants find no suggestion at all in Libman '072 of any such plurality of input modules as shown above in Fig. 1 of the present application. The Examiner attempts to use the present invention as a roadmap to piece together the cited prior art and states that:

> It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the feature of a plurality of modules to the single module of Abumehdi because it would create more options for the user to match the user's requests, such as refill the postage credit, change PIN number, updating address, etc.

Yet, the cited references do not even suggest a plurality of input modules, let alone appreciate a problem of auditing records. There is absolutely no suggestion or motivation for plurality of database records wherein the records are each accessible through at least one of a plurality of independent modules. There is absolutely no suggestion for aggregating audit data amongst the plurality of input modules to obtain a system audit data.

Accordingly, the Examiner has failed to establish a prima facie case for an obviousness rejection.

As discussed above, the references are not properly combined. Furthermore, even if the references were to be found to be properly combined, the references do not teach or fairly suggest the invention as presently claimed and in particular do not teach or suggest a plurality of database records wherein the records are each accessible through at least one of a plurality of independent modules. Additionally, the references do not teach or fairly suggest summing said sets of audit data. Further still, the references do not teach or fairly suggest a system in which each module maintains a set of audit data and in which each module increments a set of audit data. Additionally, other claimed elements are not taught or suggested by the cited references.



Independent claim 15 includes similar elements and is patentable over the cited references for at least the same reasons. The referenced dependent claims are patentable over the cited references for at least the reasons discussed above regarding the respective independent claims. For at least the above stated reasons, Appellants respectfully submit that the final rejection as to claims 1-3, 5, 9-12, 15-18, 20 and 22-26 is in error and should be reversed.

### C. Claim 4 is Not Unpatentable Under 35 U.S.C. section 103(a)

Claim 4 depends indirectly from claim 1 and is patentable for at least the reasons as described above with reference to claim 1.

Furthermore, claim 4 recites:

- 4. A method as described in claim 3 wherein said request includes a request for a digital postal indicium and comprises the further steps of:
- a) controlling said selected module to generate and return to said requesting user a digital postal indicium in accordance with said request; and
- b) controlling said selected module to update said requested record in accordance with said request. (emphasis added).

The Examiner has not shown a reference or properly combined references teaching or suggesting at least the element emphasized above.

Accordingly, the Examiner has failed to establish a prima facie case for an obviousness rejection.

For at least these reasons, Appellants respectfully submit that the final rejection as to claim 4 is in error and should be reversed.

### D. <u>Claim 8 is Not Unpatentable Under 35 U.S.C. section 103(a)</u>

Claim 8 depends directly from claim 1 and is patentable for at least the reasons as described above with reference to claim 1.

Furthermore, claim 8 recites:

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8. A method as described in claim 1 wherein said sets of <u>audit data comprise increments of a linear error correcting code</u> for correcting a field of said records, whereby said audit data can be summed to generate a system error correcting code to correct said field of said records. (emphasis added).

The Examiner has not shown a reference or properly combined references teaching or suggesting at least the element emphasized above.

Accordingly, the Examiner has failed to establish a prima facie case for an obviousness rejection.

For at least these reasons, Appellants respectfully submit that the final rejection as to claim 8 is in error and should be reversed.

E. Claims 13, 14, 27 and 28 Are Not Unpatentable Under 35 U.S.C. section 103(a)

Claim 13 depends indirectly from claim 1 and claim 14 is directly dependent from claim 13. Claim 27 depends indirectly from claim 15 and includes elements similar to those of claim 13. Claim 28 depends from claim 27. These claims are patentable for at least the reasons as described above with reference to claims 1 and 15. Additionally, they are patentable over the cited reference for the following reason.

Claim 6 recites:

13. A method as described in claim 8 wherein said sets of audit data further comprise arithmetic totals for values stored in said field of said records, whereby arithmetic sums of said values across said modules can be compared with arithmetic sums across said records, whereby numbers of errors greater than the number which can be detected by said system error correcting code can be detected. (emphasis added).

The Examiner has not provided any reference or combination of reference teaching or fairly suggesting the element emphasized above.

For at least these reasons, Appellants respectfully submit that the final rejection as to claims 13, 14, 27 and 28 is in error and should be reversed.



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#### F. Claims 6-7, 19 and 21 Are Not Unpatentable Under 35 U.S.C. section 103(a)

Claims 6-7, 19 and 21 are in the case and under final rejection of the Examiner rejected under 35 U.S.C. § 103(a) as allegedly being rendered obvious by U.S. Patent No. 5,367,464 to Abumehdi, et al. ("Abumehdi '464") in view of U.S. Patent No. 6,076,072 to Libman ("Libman '072") and further in view of U.S. Patent No. 5,778,076 to Kara, et al. ("Kara '076").

The claims discussed in this section depend directly or indirectly from claims 1 and 15 respectively and are patentable over the cited references for at least the reasons described above with reference to claims 1 and 15 and the improper combination of references.

For at least these reasons, Appellants respectfully submit that the final rejection as to claims 6-7, 19 and 21 is in error and should be reversed.

#### IX. Conclusion

In Conclusion, Appellants respectfully submit that the final rejection of claims 1-28 is in error for at least the reasons given above and should, therefore, be reversed.

Respectfully submitted.

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#### **APPENDIX A**

- 1. A method for auditing a database comprising a plurality of records, said records each being accessible through at least one of a plurality of independent modules, said method comprising the steps of:
  - a) maintaining a set of additive audit data in each of said modules;
- b) controlling said modules so that each module increments a set of audit data maintained in said module when a record is accessed through said module;
  - c) summing said sets of audit data to generate system audit data; and
  - d) verifying said database's integrity against said system audit data.
  - 2. A method as described in claim 1 comprising the further steps of:
- a) sending a user request for access to a record and said requested record to a selected one of said modules; and
- b) said selected module updating said requested record in accordance with said request .
- 3. A method as described in claim 2 wherein said selected module incorporates cryptographically processed information in said record to prevent generation of fraudulent records.
- 4. A method as described in claim 3 wherein said request includes a request for a digital postal indicium and comprises the further steps of:

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- a) controlling said selected module to generate and return to said requesting user a digital postal indicium in accordance with said request; and
- b) controlling said selected module to update said requested record in accordance with said request.
- 5. A method as described in claim 2 wherein said selected module incorporates encrypted information in said audit data to authenticate said audit data.
- 6. A method as described in claim 2 wherein said selected module incorporates time information in said audit data.
- 7. A method as described in claim 1 comprising the further step of providing security against tampering for each of said modules.
- 8. A method as described in claim 1 wherein said sets of audit data comprise increments of a linear error correcting code for correcting a field of said records, whereby said audit data can be summed to generate a system error correcting code to correct said field of said records.
  - 9. A method as described in claim 8 comprising the further steps of:
- a) sending a user request for access to a record and said requested record to a selected one of said modules; and

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b) said selected module updating said requested record in accordance with said request.

- 10. A method as described in claim 9 wherein said request includes a request for a digital postal indicium and comprising the further steps of:
- a) controlling said selected module to generate and return to said requesting user a digital postal indicium in accordance with said request; and
- b) controlling said selected module to update said requested record in accordance with said request.
- 11. A method as described in claim 10 wherein said corrected field contains a total postage amount for the corresponding record.
- 12. A method as described in claim 10 wherein said corrected field contains a total number of indica dispensed for the corresponding record.
- 13. A method as described in claim 8 wherein said sets of audit data further comprise arithmetic totals for values stored in said field of said records, whereby arithmetic sums of said values across said modules can be compared with arithmetic sums across said records, whereby numbers of errors greater than the number which can be detected by said system error correcting code can be detected.

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- 14. A method as described in claim 13 wherein said field contains a total postage amount or a total number of indica dispensed.
  - 15. A database system comprising:
  - a) a data store storing a database comprising a plurality of records;
  - b) a server maintaining said records:
  - c) a plurality of independent modules providing access to said records; wherein
- d) said modules are programmed to maintain a set of additive audit data in each of said modules and increment a set of audit data maintained in one of said modules when a record is accessed through said one module;
  - e) said server is programmed to sum said sets of audit data to generate system audit data and verify said database's integrity against said system audit data.
  - 16. A system as described in claim 15 wherein:
- a) said server is further programmed to receive user requests for access and send said user request and said requested record to a selected one of said modules;
   and
- b) said modules are further programmed so that said selected module updates said requested record in accordance with said request.
- 17. A system as described in claim 16 wherein said modules are further programmed so that said selected module incorporates encrypted information in said record to prevent generation of fraudulent records.

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18. A system as described in claim 16 wherein said selected module incorporates encrypted information in said audit data to authenticate said audit data.

- 19. A system as described in claim 16 wherein said selected module incorporates time information in said audit data.
- 20. A system as described in claim 17 wherein said request includes a request for a digital postal indicium and wherein said modules are further programmed so that said selected module generates and returns to said requesting user a digital postal indicium in accordance with said request; and updates said requested record in accordance with said request.
- 21. A system as described in claim 15 wherein each of said modules is physically secured against tampering.
- 22. A system as described in claim 15 wherein said sets of audit data comprise increments of a linear error correcting code for correcting a field of said records, whereby said audit data can be summed by said server to generate a system error correcting code to correct said field of said records.

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23. A system as described in claim 22 wherein said modules are further programmed so that said selected module incorporates encrypted information in said record to prevent generation of fraudulent records.

24. A system as described in claim 23 wherein said request includes a request for a digital postal indicium and wherein said modules are further programmed so that said selected module generates and returns to said requesting user a digital postal indicium in accordance with said request; and updates said requested record in accordance with said request.

- 25. A system as described in claim 24 wherein said corrected field contains a total postage amount for the corresponding record.
- A system as described in claim 24 wherein said corrected field contains a total number of indicia dispensed for the corresponding record.
- 27. A system as described in claim 22 wherein said sets of audit data further comprise arithmetic totals for values stored in said field of said records, whereby arithmetic sums of said values across said modules can be compared with arithmetic sums across said records, whereby numbers of errors greater than the number which can be detected by said system error correcting code can be detected.

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28. A system as described in claim 27 wherein said field contains a total postage amount or a total number of indicia dispensed.